

WHAT WE CLAIM IS:

1. A delivery device for altering the composition of animal waste,

characterised in that

the delivery device is adapted to deliver to an animal one or more treatment substances that can directly or indirectly affect the conversion of nitrogen containing compounds in animal waste, once the waste is excreted from the animal.
2. A delivery device as claimed in claim 1 wherein the animal waste is urine.
3. A delivery device as claimed in claim 1 or claim 2 wherein said one or more treatment substances includes a urease inhibitor.
4. A delivery device as claimed in claim 3 wherein the urease inhibitor is N-(n-butyl) thiophosphoric triamide (NBPT).
5. A delivery device as claimed in any one of claims 1 to 4 wherein said one or more treatment substances includes a nitrification inhibitor.
6. A delivery device as claimed in claim 5 wherein the nitrification inhibitor is 3,4-dimethylpyrazole phosphate (DMPP).
7. A delivery device as claimed in claim 5 wherein the nitrification inhibitor is dicyandiamide (DCD).

8. A delivery device as claimed in any one of claims 1 to 7 wherein said one or more treatment substances includes a beneficial compound which enhances the soil immobilisation of nitrogen containing compounds.
9. A delivery device as claimed in claim 8 wherein the beneficial compound enhances the growth of soil microorganisms.
10. A delivery device as claimed in claim 8 or claim 9 wherein the beneficial compounds is a complex carbon source.
11. A delivery device as claimed in any one of claims 8 to 10 wherein the material is a tannin.
12. A delivery device as claimed in any one of claims 1 to 11 wherein the animal waste acts as a carrier for said one or more treatment substances.
13. A delivery device as claimed in any one of claims 1 to 12 wherein said delivery device is administered orally to an animal.
14. A delivery device as claimed in claim 13 wherein the delivery device is a ruminal bolus.
15. A delivery device as claimed in claim 13 or claim 14 wherein the delivery device is a rumen-stable delivery device.
16. A delivery device as claimed in claim 15 wherein the delivery device includes an encapsulation system.
17. A delivery device as claimed in any one of claims 1 to 12 wherein said delivery device is inserted into an animal's bladder.

18. A delivery device as claimed in claim 17 wherein the delivery device is made of a preformed matrix.
19. A delivery device as claimed in claim 18 wherein the matrix is silicone.
20. A delivery device as claimed in anyone of claims 17 to 19 wherein the delivery device has a lower specific gravity than urine.
21. A delivery device as claimed in any one of claims 1 to 20 wherein one or more treatment substances are contained within the inner core of the delivery device.
22. A delivery device as claimed in any one of claims 1 to 20 wherein the delivery device is impregnated with said one or more treatment substances.
23. A delivery device as claimed in any one of claims 1 to 22 wherein said one or more treatment substances are delivered by diffusion from the delivery device.
24. A delivery device as claimed in any one of claims 1 to 22 wherein said one or more treatment substances are delivered through dissolution of the delivery device.
25. A delivery device as claimed in any one of claims 1 to 24 wherein the delivery device is configured to allow for sustained, slow release of said one or more treatment substances.
26. A delivery device as claimed in any one of claims 1 to 25 wherein the delivery device includes an electrochemical cell.

27. The use of one or more treatment substances in the manufacture of a delivery device as claimed in any one of claims 1 to 26 for delivering said one or more treatment substances to an animal to directly or indirectly affect the conversion of nitrogen containing compounds in animal waste, once the waste is excreted from the animal.
28. A method of altering the composition of animal waste, characterised by the step of introducing to an animal one or more treatment substances that can directly or indirectly affect the conversion of nitrogen containing compounds in animal waste, once the waste has been excreted from the animal.
29. A method as claimed in claim 28 wherein said one or more treatment substances are introduced by way of a delivery device as described in any one of claims 1 to 26.
30. A method as claimed in claim 28 or claim 29 wherein said one or more treatment substances are introduced to the animal over an extended time period.
31. A method for decreasing the amount of convertible nitrogen released from an animal characterised by the step of administering to the animal an effective amount of a treatment substance capable of directly or indirectly affect the conversion of nitrogen containing compounds in animal waste, once the waste is excreted from

the animal.

32. A composition for introduction to an animal to alter the composition of animal waste,

characterised in that the composition includes

one or more treatment substances for directly or indirectly affecting the conversion of nitrogen containing compounds in animal waste, and

material to ensure the conversion is affected once the animal waste is excreted from the animal.
33. A composition as claimed in claim 30 wherein the material is selected from a list including lipid-based coatings, wax coatings and polymer matrices
34. A delivery device substantially as described herein with reference to and as illustrated by the accompanying description and drawings.
35. A method of altering the composition of animal waste substantially as described herein with reference to and as illustrated by the accompanying description and drawings.
36. A composition substantially as described herein with reference to and as illustrated by the accompanying description and drawings.